The sixth lecture is devoted to the consideration of the "Numerical Method of Research in Medicine." The nature and value of this method are candidly and, as we believe, correctly stated. The gist of the matter is, in fact, contained in the following sentences: "The numerical method is, in short, none other than that method by which experience and induction are rendered as accurate as possible. When, therefore, we speak of the numerical method in reference to medical science, we only speak, in truth, of a more strict and more systematic method of observation and of induction than the method of common experience." The limitations as regard the special applications of the numerical method, especially to researches in etiology and in therapeutics, are concisely and correctly stated; as, also, the requisites for its safe and successful employment in medical researches.

The subject of the concluding lecture is, "The Analogical, Philosophical, or purely Inductive Method of Research." This lecture, which the author evidently regards as the most important of the series, is, for us, the least satisfactory. After a careful perusal of it, we confess that we do not get a clear idea of the nature and applications of the great principle which it is the author's aim to develop. Admitting that this may be due to deficient power of comprehension on our part, it is not, perhaps, assuming too much to infer that the advanced medical student and the junior practitioner, for whose benefit the work has been prepared, will be likely to experience a similar difficulty. The fundamental principle of the analogical, philosophical, or purely inductive method of research is thus stated: "Expressed more technically, we may say that the primary or fundamental principle of life is the unity of structure and function of organisms both in time and space. This, then, is the point to which all your theories should tend, the principle by which they should all be regulated. This should ever be present to your thoughts; this should ever guide your observations. Thus used, it is the bond that will bind science, and observation, and fact together, and confer upon you the highest qualities of the practitioner, namely, the power to take profound philosophical views, and the ability to apply those views to the practice of your art. The principle thus announced will doubtless be severely questioned, and its truth controverted, but it will finally be almost universally accepted."

As "practical examples of the conduct of an analogical investigation," the author considers, first, an investigation of the pathology of "bronzed skin;" and, second, "the metastatic character and general pathology of gout and rheumatism." As illustrations of the logical use of analogy in medical questions, these examples are sufficiently intelligible and instructive, but we are at a loss to perceive the exemplification which they afford of the great principle announced in the above quotation. Other readers, however, may in this respect be more fortunate than ourselves.

We have noticed in this brief article the portions of the lectures which appear to us open to criticism. Irrespective of these, the work is interesting and suggestive of trains of thought and inquiry which are of great importance, as well as interest, both to the student and practitioner of medicine. We are glad to see even so small a volume, treating on subjects pertaining to medical logic, by so able a thinker and writer as Prof. Laycock, and we hope that it may be followed by a larger work, either from the same source or by some other competent hand. A. F.

ART. XVII.—*The History and Statistics of Ovariotomy, and the Circumstances under which the Operation may be regarded as Safe and Expedient: being a Dissertation to which the Prize of the Massachusetts Medical Society was awarded,* May, 1856. By GEORGE H. LYMAN, M. D. Boston: 1856. 8vo., pp. 146.

THE monograph of Dr. Lyman is evidently the fruit of a vast amount of well directed and laborious research; and must command unusual attention as by far the fullest and most reliable contribution to the study of the results of ovario-

tomy that has hitherto appeared. Its author has earned the gratitude of future investigators in the same field; for, with his numerous references and comprehensive tables and analyses, he has smoothed away many discouraging difficulties in their task. The character of his performances as a collector, sifter and arranger of statistical materials—both old and new—can only be appreciated by those whose patience and perseverance have been tried in the exhausting drudgery of similar pursuits. In addition to these essential attributes of a prize paper on such a subject, we note an elegance of style and a general accuracy and candor of tone which do still further honour to the verdict of the Massachusetts Society, while they materially add to the authority of the dissertation.

We have studied its various and comparatively numerous details with great interest and considerable care; but although Dr. Lyman's exposition of the History and Statistics of Ovariotomy is probably the fullest yet published, we are unable to consider it complete enough to warrant any positive conclusions as to the expediency of the operation, much less its safety, under any circumstances whatever. Under this impression, we of course regret to find even a qualified conclusion arrived at by our author in favour of the abdominal section under certain circumstances.

Before entering upon the discussion of the operation for extirpation of the ovary, some twenty-seven pages are devoted to a brief review of the other modes of treatment which have been proposed or adopted. Under this head internal medication, paracentesis, paracentesis combined with other treatment, incision, permanent opening in the cyst, and lastly, injection of the cyst, are more or less fully noticed, and at the same time illustrated with such cases as the compiler may have met with in the search for cases of ovariotomy.

The questions involved in the preliminary sketch are, in our view, more interesting if not more important practically than those which are the leading object of the paper. We cannot complain that they have received so small a share of attention in an essay expressly occupied with another subject of inquiry, but we should nevertheless have been glad to meet with a correspondingly rich display of cases in which the available alternative methods of operation might have been compared in their progress and results with the more radical and dangerous procedure. We are disposed, for instance, to believe that unequivocal cases of tapping, or tapping and subsequent treatment, and of tapping combined with injection of tincture of iodine, are rapidly approaching in number those of extirpation; and we should like to see a tabular statement of details of such cases similar in reach and character to the table of three hundred cases which constitutes the principal feature of the work before us. We might thus be enabled to determine, perhaps with greater certainty and ease, the circumstances under which the milder operations may be regarded as safe and expedient, whether with or without reference to the graver alternative of abdominal incision.

As we have neither space nor time for a critical examination of the tables, we must content ourselves with the author's exhibit of the facts which he gathers from his own analysis.

"In three-tenths of the cases, the operation could not be completed.

"The rate of mortality in all the operations was 40.13 per cent.

"In seven-tenths of the cases the operation was completed, with a resulting mortality of 42.78 per cent.

"In the unfinished operations the mortality was 30.68 per cent.

"The proportion between the whole number of recoveries, *after the removal of the tumour*, and the whole number of operations undertaken in hope of such a result, we find to be as 39.66 to 100, or less than two-fifths!

"Adhesions caused the abandonment of the operation in 22.06 per cent. of the whole number, or caused 77.27 per cent. of the failures.

"No tumour was found in nearly three per cent. of the whole.

"Where adhesions complicated the removal, 47.82 per cent. died; where no adhesions complicated the removal, 32 per cent. only died.

"Of the whole number of short incisions, 30.76 per cent. died; of those

completed, 38.33 per cent. died; of those not completed, 22.80 per cent. only died.

"Of the whole number of long incisions, 41.95 per cent. died; of those completed, 41.46 died: and of those not completed, 45 per cent. died.

"Previous tapping does not always cause adhesions.

"As far as these cases go, the mortality is least between the ages of fifty and sixty, and greatest under twenty.

"The mortality is least when the disease is of between three and four years' duration.

"There is but little difference in the mortality between the married and single.

"The right ovary is more often diseased than the left, though less so than often stated.

"Of the above fatal cases, 42.35 per cent. were from peritonitis, 23.52 per cent. from hemorrhage.

"Death ensued, upon an average, the eighth day; the average of deaths from peritonitis being also the eighth day; and those from hemorrhage in twenty-two hours.

"And, finally, in more than ten per cent. of the cases, important errors of diagnosis occurred."—Pp. 116, 117.

The general inference from the tables is, that 40.13 per cent. are fatal and that more than three fifths are unsuccessful, "Nor does this look so forbidding," says our author, "when we compare it with other capital operations." (!) He then goes on in support of this proposition with a comparison between this mortality and that from amputations and other operations performed in hospital practice! We shall return to this mode of working out the problem directly; in the mean time, let us read the concluding paragraph in which are given the answers to the main questions proposed by the title of the essay.

"By far the strongest objection would appear to consist in the imperfection of the diagnosis. Were this removed, the rate of mortality would doubtless be less than that of any of the larger operations; and, even in its present state, we have seen that it compares not unfavourably with them.

"If, then, in view of the foregoing statistics, we may claim for the operation that it is, in certain cases, justifiable, what are these cases? or, in other words, 'Under what circumstances may the operation be regarded as safe and expedient?'

"In view of the fact that the tumour is occasionally of very slow growth, and that the general health of patients suffering from cystic disease of the ovary is ordinarily good, unless inflammation of the cyst supervenes, or some accident causes its rapid development, we should say that it was neither safe nor expedient to put in force any operative procedure, before constitutional symptoms are excited by the suffering from distension, and the consequent disturbance of the functions of digestion, respiration, &c.

"The fear of adhesions, or other future contingency, does not render an operation safe or expedient, as has been often urged: for those contingencies may never arise.

"If any operation is contemplated, the above period (*i. e.*, that in which serious constitutional disturbance begins to show itself) should be selected; further delay diminishing the chances of a favourable result, by the progressive loss of health and strength, and the liability to repeated attacks of subacute inflammation of the cyst, and the formation of adhesions.

"It is neither safe nor expedient to operate, if there be any signs of a malignant diathesis.

"The safety of the operation is greatly diminished by the co-existence of uterine and other visceral disease; and hence it is neither safe nor expedient to operate until every known method of diagnosis has been exhausted—as the touch, the use of the uterine sound, auscultation, percussion, &c.; after which, no case, no matter how positive apparently the diagnosis may be, should be operated upon until after previous *tapping*, that every certainty, short of actual sight, may be possessed.

"This preliminary tapping should be followed by moderate pressure, in the

hope of ohecking the refilling of the cyst, as such favournble results have occasionally followed ; and the pntient ie in no worse condition for ulterior measures, even should the tapping prove useless.

"If, after the removal of the charncteristic fluid, it ngain accumulates, no 'bold incisions' are justifiable until the smallest possible exploratory incision has shown that no adhesions exist, so far as this can be ascertained by the introduction of a finger or probe.

"Under the above conditions alone do we think that ovariotomy can be considered both safe and expedient. But the further question now presents itself, Is not this operation expedient, even though it mny be less safe, in mnny of the remaining cases?

"The answer to this depends entirely upon how far it is justifiable for a surgeon to assume the risk of cutting short a life, which, nt any rate, must terminate in a few weeks or months at most, in the very uncertain hope of prolonging it by operntion. This is a question of medical ethics which each individual conscience must answer for itself, and upon which nn honest difference of opinion may, and in fact does, exist. If, however, we take as our guide the surgicnl practice in many malignant diseases—the treatment, by amputntion, of inveterate cases of necrosis, articular disease, &c., the opcrntions of embryotomy, or Cæsarean section—we should say, without hesitation, that very many of the more desperate cases of ovarian tumour were legitimate subjects for operation. Has the surgeon a right to eny to one, who, with death staring her in the face, urgently demands, ae her last hope of life, such relief as his art mny perchance afford, 'I dare not assume the responsibility?'

"We think, then, that if the facts are as stated in the foregoing paper, tho following conclusions are deduciblo from them:—

"1. The mortality attendant upon ovariotomy is no greater than it is after other capital operations.

"2. The mortality resulting from extensive incisions of the peritoncum is generally over-estimated.

"3. Fully devcloped cystic diseaee of the ovarium tends rapidly to a fatal result.

"4. No method of treatment heretofore devised for it is so successful as extirpation ; excepting, possibly, that by injection with iodine, of the results from which, wo have, ae yet, insufficient statistics.

"5. The operation is unjustifiable in the early stnges of the disease.

"6. After nctive development has commenced, with the supervention of constitutional symptoms, the sooner the operation is performed, the greater the chnnce of recovery.

"7. No rule can be laid down as to the length of the incision, other than the general one—that, the shorter it ie, the less the mortality; and thnt, therefore, the primary incision ehould alwaye be emall, nnd extended afterwards as may be necessary, according to the exigencies of each pnrticulnr cnse.

"8. If, after the operation is commenced, extcnsive adhesions should be discovered, either the complete abandonment of the intended extirpation, or the attempt to cause euppuration, nnd gradunl contraction of the cyst, by means of a permanent external opening, are to be preferred to the division of the adhesions, and completion of the operntion as originally designed.

"Although, from the statistics given, the conclusion has been formed, thnt, under given conditions, extirpation is the safest remedy which can be used for the radical cure of encysted ovarian tumours, it must be confessed thnt many elements to an entirely satiefactory decision are still wanting—euch as the natural history of the disease, uninfluenced by surgical treatment of any kind, and the results of tapping and spontaneous rupture, as shown by a larger number of cases than have yet been collected. As a contribution to this end, it was originally intended to nppend, in addition to the following section upon diagnosis, a table of some fifty cases each of tnpping and spontaneous rupture, together with a considerable number of cases resulting fatnlly, in which no surgical treatment was ndopted: but other avocations have delayed the fulfilment of this design ; nnd, as they are not called for hy the question proposed, the idea is, for the preseut, at least, abandoned, nnd this portion of the essny

concluded in the words of Mr. Walne, who, after recommending that the operation be undertaken only in well-selected cases, says, 'Still less let me be supposed to advise that any surgeon should engage in its performance who has not, by habits of operating—yet more by long habits of careful observation and treatment of disease generally, and by very considerate and studious examination of the nature and connections of this particular disease, and the tendencies of the viscera, which may be involved in mischief by an ill-judged operation, or ill-conducted after treatment—qualified himself to cope with difficulties from which it is unreasonable to expect an exemption.' Words of sound judgment, which are commended to the careful consideration of that numerous class of individuals who look upon ovariotomy as a very simple operation, requiring no particular surgical skill."—Pp. 120–24.

We are glad to find in the closing paragraph above quoted, a wholesome doubt confessed against his own qualified decision in favour of extirpation, as "under given conditions," "the safest remedy which can be used for the radical cure of encysted ovarian tumours." He acknowledges, in spite of the statistics so laboriously sought and admirably arranged and exhibited in all available—and we had almost said, in view of their fractional percentages, imaginary—aspects, that "many elements to an entirely satisfactory decision are still wanting; such as the natural history of the disease uninfluenced by surgical treatment of any kind, and the result of tapping and spontaneous rupture, as shown by a larger number of cases than have yet been collected." He might have added the results of the iodine injection which has recently been the subject of much discussion, and has been strongly advocated in the French Academy of Medicine, and in the Medico-Chirurgical Society of Edinburgh.

We agree with him entirely, that it is impossible to reach a positive determination of the question of the treatment of ovarian disease, until the whole subject has been far more thoroughly and precisely studied in all its bearings. For this purpose we need careful and distinct observations, to the extent, not of one, two or three hundreds, but of thousands, to make percentages which are entitled to authority in a matter so nearly one of life and death. Even with these large numbers, such are the various forms of the ovarian disorder, the various general pathological conditions, the various antecedent and existing moral and physical influences at work upon the different patients, that the assembled cases may be said to have little but the sex in common; and under the very best classification they must be distributed into numerous groups, each of which, in order to afford a practicable percentage, must count at least its hundred cases. The aid afforded by the most extensive and best arranged statistics, however well authenticated, is but approximative after all; since each case has to be disposed of, in actual practice, on its individual merits; just as in life insurance offices, where statistical calculations are best understood and general results most positive, each applicant is accepted or rejected only after a rigorous personal examination, analogous to that which each patient ought to undergo before being subjected to any serious operative measures.

These cavcats, of course, apply scarcely less urgently to the statistical results of all important operations, than to those of doubtful value or necessity. For the purposes of comparison, therefore, the ovariotomy results and those of other capital operations so often balanced against each other in the desperate attempt to mask the danger of the former, are useless (both being inconclusive), even supposing that they otherwise possessed in common any characteristic of history, sex, condition or surrounding influences, except the risk of life.

It is for practitioners of amputation and the other leading operations involved in the newly-discovered and still-mooted responsibility, to determine and provide against the fatality imputed to these remedies of *last resort;* but admitting for the moment the charge against them to be established, it does not follow that an old wrong is to justify a new one, merely because the former has long enjoyed a confidence which is vainly claimed for the latter. Nothing in our view more strikingly betrays the weakness of the position taken by the

ovariotomists than the frequency and earnestness with which they appeal to this delusive issue.

We had intended to enlarge more fully upon this matter of comparison between hospital operation statistics—such as they are, on the one side—and ovariotomy statistics—still more unavoidably imperfect, incongruous and limited in range, as well as meagre and inconclusive, on the other—but we have since found ourselves so completely and forcibly anticipated by an authoritative writer (Dr. Duncan, of Edinburgh) in an article quoted in the Quarterly Summary of the present number (see Dep. Surgery, p. 519), that we gladly refer to his capital *exposé* in support of the position here maintained. To the same paper we would direct the reader for an admirable review of the strange perversions of statistics which the advocates of ovariotomy are led into in attacking palliative and other operations, such as tapping and injections, and contending for their own.

Grave as the mortality from the operation for extirpation is assumed to be by Dr. Lyman, we strongly suspect that it is still underrated. Our author is fully alive to the painful truth that many fatal cases are never allowed to meet the light, and does not hesitate to dwell upon this as seriously impairing his own confidence in the value of the deductions from the cases of all kinds within his reach. It is quite as probable, moreover, that the proportion of errors of diagnosis, frightful though it be, is by no means as startling as it would be were the secrets of the tomb exposed.

Out of the mist of uncertainty which envelops the discussion of this embarrassing subject, a few sufficiently established truths stand prominent.

Among these may be mentioned—

1st. That there are several distinct forms and species as well as various complications of ovarian disease, which differ in their course and termination, and do not admit of similar modes of treatment.

2d. That the diagnosis of these different forms and complications is often extremely difficult, if not at times impossible.

3d. That patients have recovered spontaneously from undoubted ovarian disease.

4th. That notwithstanding its frequently exhausting tendencies, patients affected with unequivocal ovarian disease have lived in tolerable comfort many years without treatment, and that others have survived a considerable number of years under palliative tapping and other comparatively mild remedial measures.

5th. That a certain number of cases of ovarian disease have been permanently relieved by tapping alone, and a much larger number have been cured by tapping followed by injections, especially of tincture of iodine; but that others have remained uncured and many have died from tapping, as also from tapping and injections.

6th. That in 300 trials the operation for extirpation *seems*[1] to have succeeded in at least 179 instances, but that it could not be completed in 88 of these cases, and that it has been followed by death in 120 of them; and finally, that, whether completed or not, it is one of the most dangerous operations in the practice of surgery.

Beyond these generalities there is little that is not still in doubt, so far as practical inferences are concerned. If we may judge from the assertion of high authorities, palliative tapping is the operation which has been most frequently resorted to, and is regarded as the least frequently fatal. In the recent discussion at the French Academy, M. Moreau stated that he had seen it tried without injury over a hundred and fifty times; Jobert was said to have performed it safely at least twenty-five times, and Velpeau announced that he had practised it, or seen it practised, perhaps two hundred times without serious result, that he then met with three fatal cases in succession, but had subsequently had ten cases in which no mischief was produced.

[1] The permanent recoveries are necessarily uncertain in many instances, because the subsequent history of the patient is not sufficiently complete.

With regard to the standing of ovariotomy as an accepted operation among professional men at large, we are surprised to find Dr. Lyman assuring his readers that "in spite of the high surgical authorities arrayed against ovariotomy, it cannot be doubted that the operation for entire extirpation is looked upon with increasing favour by large numbers of the profession." (p. 27.)

We do not pretend to dispute the fact, except so far as our own immediate vicinity is concerned, although we should be sorry to believe that the operation is really gaining substantial ground in any professional community. Dr. Duncan shows that, practically, its status among British surgeons is not advancing, in spite of a few special champions. The recent discussions in the French Academy have shown that among the Parisian authorities it is most unequivocally condemned. In Philadelphia we believe it has few partisans, and although opportunities are of course not wanting, it has had, except perhaps in one or two solitary instances, but one performer. Attention has been already called in another periodical to the significant fact that of the three hundred cases collected by Dr. Lyman, 105 occurred in the practice of three operators—two British and one American—one-third of all the cases on record! E. H.

Art. XVIII.—*Medical Notes and Reflections.* By Sir Henry Holland, Bart., M. D., F. R. S., etc. etc., Fellow of the Royal College of Physicians, Physician in ordinary to the Queen, and Physician in ordinary to his Royal Highness, Prince Albert. From the third London edition. Philadelphia: Blanchard & Lea, 1857. 8vo. pp. 493.

It is pleasant to take up a medical work which is neither a text-book nor a monograph; a work not written to oppose any generally received doctrine, nor devoted to the defence of some particular theory. The pleasure is greatly enhanced when to these negative recommendations are added the positive attractions derived from the fact that the work is the production of a mind of the first order, enriched by thought, learning, and experience. Such a work is that entitled *Medical Notes and Reflections*, by Sir Henry Holland, first published nearly twenty years ago, and now republished, a second time in this country, from the third London edition. Distinguished as the author is as a ripe scholar, a profound thinker, a philosophical observer, and also by his high social and professional position, we should anticipate gratification and instruction from his writings. The notes and reflections of such a writer, selected from private records accumulated during twenty years, could hardly fail to prove interesting and valuable. That they have been so regarded, the repeated demand for new editions of the work is sufficient evidence. The call for a new edition at this time, in this country, is a sufficient proof of its intrinsic excellence. Taking into view the great changes in pathological and therapeutical views since the publication of the first edition, and also the multitude of new works which are almost daily issuing from the press, Dr. Holland must, we think, experience in a high degree the satisfaction of successful authorship, from the desire of his transatlantic brethren for a new American edition of *Notes and Reflections* prepared for publication so many years ago. How few of the medical works coeval with this, are now deemed valuable, except as belonging to post literature!

As now constituted, the work has undergone some important alterations. Certain portions have been detached and embodied in another volume, under the title of *Chapters on Mental Physiology.* To supply the vacuum thus left, a few chapters have been added, taken from papers which the author had originally designed for a second volume of this work.

The work embraces notes and reflections on a great number and diversity of subjects. The first chapter, on "Medical Evidence," is one of the best in the series. The practitioner will find in this chapter much food for meditation. The critic finds occasion to complain only of its brevity. The succeeding chap-